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POLICIES, PROGRAMMES AND PRACTICES FOR MAXIMIZING
THE USE OF EDUCATIONAL RESOURCES

Report to the Conference of Ministers Responsible for Human Resources Planning
Development and Utilization on Policies, Programmes and Practices for
Maximizing the use of Educational Resources

I. Introduction

The development priorities, objectives and strategies of the African region are clearly spelt out in the Lagos Plan of Action adopted by the Assembly of the Heads of State and Government of the Organization of African Unity in 1980; in the African Priority Programme for Economic Recovery 1986-1990 again adopted by the Assembly of the Heads of States and Government in 1985; and in the United Nations Programme of Action for African Economic Recovery and Development 1986-1990 adopted by the special session of the UN General Assembly. All these are the result of serious consultation, collaboration and a commitment to joint action by African States to steer together the ship of development to a brighter future. The factors which have contributed to the present state of affairs are a mixture of economic, social, political, educational and environmental factors. In respect of education, the development of education in general is the result of a complex interactions amongst different sectors of society with the economic, social, political and cultural life of the people. In response to these interacting factors and an examination of the social context of society over the last two decades, reveal four possible approaches to the development of education in Africa viz:

- Education as a social institution to ensure that the social needs of society are catered for;
- Education as a series of measures and practices that constitute education process;
- Education as a body of knowledge skills, additional disposition and behaviour patterns: i.e. the education context; and
- Education as the result of product of educational measures i.e. the criteria of ability to meet the needs of society.

It is, therefore, proper to review, examine and analyse the development of education in Africa over the last two decades taking into consideration some of the factors which influence educational development. Most of these factors lie outside the direct control of those responsible for education and its development. Some of these factors are: demographic, economic, political; social and cultural; environmental; progress of science and technology; and **exogenous** factors. Thus the review which follows here under will not only look at the various approaches to educational development, but will also examine the factors which influence education and the resource utilization in education, among other things.

At this point, it should be emphasized that inspite of the massive investments made to education, the vast quantitative expansion of education at all levels of education, African educational systems in the eighties still appear antiquated, inequitable and ill-functioning. They appear ill-equipped to solving the African socio-economic crisis; they continue to create inequalities between the educated and uneducated; perpetuate rural-urban drift; continue to lead to waste and inefficient use of resources as will be demonstrated later; and are failing to equip their outputs with the knowledge, skills, attitudes and values conducive to self-reliance, productivity and self-fulfilment.

This criticism of educational systems has been voiced in many African countries, mainly, because of: the failure of educational systems to keep pace with the demand for education by the growing population, and the limited educational opportunities available to youth and adults, and the emergence of the problem of turning out school leavers without vocational orientation, and therefore unable to engage in productive and socio-economic activities for self improvement and fulfilment.

These features have been prevalent over the last decade and are bound to continue for the foreseeable future for a number of reasons viz.: the unsuitability of the curriculum to the socio-economic development of African countries; the neglect of vocational and technical education required in response to the needs of the economy; the emphasis attached to formal and general education at the expense of technical/vocational and non-formal education; the inappropriate teaching methods used by inadequately qualified and untrained teachers; the terminal dead-end nature of education at each of the tripartitions of the educational system; and the diminishing financial resources being made available to education resulting into lack of equipment, textbooks and instructional materials with the resultant lowering of quality.

In pointing out these short-comings, no claim is being made to say that African education over the last two decades has been a failure. Rather the point is being made of the inability of African education to cope with the current social and economic crisis and in ensuring that basic human needs are fulfilled.

This report therefore will examine, review, analyse and appraise educational policies, programmes and practices over the last decade; how these have influenced the development of education; and the effective utilization of resources. In particular it will examine:

- (i) recent trends in African educational development; how best educational targets have been achieved more economically to meet current economic and development needs and priorities;
- (ii) the factors which have influenced and will continue to influence the development of education;
- (iii) the optimum ways in which educational resources have been and will continue to be effectively utilized in the face of stringent economic measures; and
- (iv) current educational policies, programmes and practices as regards investment in education.

II. Recent Trends in Educational Development

Following the independence of many African countries in the sixties, a number of issues became evident. First there was the need to fulfil the pre-independence promises that education would be provided to the majority of the people. Second, there was the urgent need to prepare for the expected exodus of key expatriate personnel even without the enforced localization of personnel to ensure the desired step-up of the rate of development and economic growth. Third, there was the urgent need to review the inherited education system, its structure, curriculum, methods and content in relation to African development. Fourth, the need for equity and a judicious utilization of resources.

It was in the light of these pressing issues that African States adopted the Addis Ababa plan on education and spelt out the long term targets for education for the period 1961-1980 as follows:

- (a) primary education to cover broadly six years would be universal, compulsory and free;
- (b) education at the second level would be provided to 30 percent of the children who completed primary school;
- (c) higher education would be provided, mostly in Africa itself to 20 percent of those who complete secondary education;
- (d) the improvement of the quality of African schools and universities would be a constant aim; and
- (e) the percentage of national income earmarked for financing education would be increased from 3 percent in 1961 to 4 percent in 1965 and to 5 percent in 1980^{1/}.

At the Tananarive Conference, the targets for higher education were increased further from what had been stated in Addis Ababa, thus:^{2/}

Table 1: The targets of the Addis Ababa and Tananarive Conference for Higher Education in Middle Africa

	1961	1965	1970	1975	1980
<u>Tananarive Plan Enrolments (1000)</u>	-	46	80	144	274
As % of relevant age group		0.35	0.55	0.89	1.51
<u>Addis Ababa Plan</u>					
Enrolment as % of relevant age group	0.2	0.2	0.4	1.2	2.0

As table 2 shows, both the Addis Ababa and Tananarive targets in Table 1 had not been achieved by 1980, let alone by 1983. Gross enrolment ratio for the second level was 16 percent and 20 percent in 1980 and 1983 respectively, far short of the Addis Ababa target of 30 percent in 1980.

^{1/} UNESCO/ECA, The Addis Ababa Plan, Final Report, Addis Ababa, 1961.

^{2/} UNESCO, Tananarive Plan, Final Report, Tananarive, 1963.

At the tertiary level, only 1.2% of the age group had been enrolled as opposed to 2.0% and 1.5% of the Addis Ababa and Tananarive targets respectively in 1980. At the primary level, few countries had free and compulsory education, and indeed only a handful of countries had universal primary education.

Table 2 also shows that vast expansion of education has taken place at all levels of the educational system in Africa. However, it must be pointed out that while education has been growing very fast in terms of quantity, other factors have not remained static. For instance the population of African countries is expected to double by the year AD 2,000, i.e. from just over 400 million in 1976 to over 800 million in the year 2,000 AD. This means that more and greater effort has to be put into the provision of education.

Many African countries have neither the capacity nor the capability to absorb the fast increase of school age population. The problem of means and ways has kept and will continue to keep many of the youngsters out of school age population there have been increases in the absolute numbers of those out of school. As UNESCO pointed out a few years ago, the fast rise in population is likely to lead to actual declines in the rate of schooling and the absolute increase in the rate of illiteracy. This situation is illustrated in Table 3 which shows more out of school youths in the age-group 12-17 in 1980 of 38,380 as opposed to 27,170 in 1970 of the same age-group.

Three points ought to be mentioned in connection with the quantitative expansion and the efficient utilization of resources. First, evidence shows in many African countries that participation rates are calculated on the basis of enrolment rates without taking into account the high drop-out rates of some 25 per cent in many countries of those pupils who are enrolled at school. Also, no account is taken of the repetition rates in many countries which varies between 12 to 14 per cent depending on the subregions of the continent.

If these two rates are taken into account, then the actual enrolment rates in Africa are much lower than the figures given in Table 2. In this regard, greater efforts have to be made in the expansion of education than it may appear now.

Second, following the Addis Ababa plan and the various national education plans which appeared in the sixties and seventies, the educational policies of many countries were designed to promote first and foremost secondary and higher education. These policies however did not and/or took very little account of the country's needs and resources. Consequently, there were disproportionate development of educational structures; neglect of technical/vocational education; dead-end nature of education at each of the tripartitions; greater social inequalities; and above all, inefficient use of human, material and financial resources. In fact, the high rates of repetition and dropout have led to inefficient use of teachers and financial resources.

Third, a number of problems have arisen as a result of the quantitative expansion of education. Notable among these problems have been the disparities in enrolments between rural and urban areas where those of the former are about a third of the latter. Then there are those problems associated with inequalities in access to education and in the chances of success; also there are differences

Table 2: Enrolments in forty six African countries

	1960	1970	1975	1980	1983
Primary education					
Number of students	11,853	20,971	30,117	47,068	51,345
Index (1960-100)	100	177	254	397	433
Average annual growth rate					
from 1960 to:		5.9%	6.4%	7.1%	6.6%
from 1970 to:			7.5%	8.4%	7.1%
from 1975 to:				9.3%	6.9%
from 1980 to:					2.9%
Gross enrolment ratio	36%	48%	58%	76%	75%
Secondary education					
Number of students	793	2,597	4,284	8,146	11,119
Index (1960-100)	100	327	540	1,027	1,402
Average annual growth rate					
from 1960 to:		12.6%	11.9%	12.4%	12.2%
from 1970 to:			10.5%	12.1%	11.8%
from 1975 to:				13.7%	12.7%
from 1980 to:					10.9%
Gross enrolment ratio	3%	7%	10%	16%	20%
Tertiary education					
Number of students	21	116	216	337	437
Index (1960-100)	100	552	1,029	1,605	2,081
Average annual growth rate					
from 1960 to:		18.6%	16.8%	14.9%	14.1%
from 1970 to:			13.3%	11.3%	10.8%
from 1975 to:				9.3%	9.2%
from 1980 to:					9.1%
Gross enrolment ratio	0.2%	0.6%	0.8%	1.2%	1.4%
All levels					
Number of students	12,667	23,684	34,617	55,551	62,901
Index (1960-100)	100	187	273	439	497
Average annual growth rate					
from 1960 to:		6.5%	6.9%	7.7%	7.2%
from 1970 to:			7.9%	8.9%	7.8%
from 1975 to:				9.9%	7.8%
from 1980 to:					4.2%

Note: Numbers of students in thousands.

Source: ECA Secretariat

Table 3: Out-of-School Youth in Africa 1960, 1980 and 2000 A.D.

Year	Age-Group 6-11				Age-Group 12-17 (1000)			
	(1000) Popula- tion	(1000) Attend School	(1000) Out of school	% out of School	Popula- tion	Attend School	Out of School	% out of School
1960	40,650	12,700	27,950	68.8	33,320	5,150	20,170	84.5
1980	72,580	44,600	27,980	38.3	59,250	20,870	38,380	64.8
2000	134,340	106,010	28,330	21.1	111,820	58,640	53,180	47.6

Source: UNESCO, Document ED-82/MINEDAF/Ref.2, Table 69

in the quality of education consequent upon the teachers' qualifications, lack of instructional facilities and materials, equipment and textbooks. These are a few of the problems having arisen as a result of vast increases in the expansion of education over the last two decades.

III. Factors influencing the development of education in Africa

A lot has been written about factors which have contributed to the development of education in Africa the last two decades. Some of these factors are: demographic, economic, environmental; political, social and cultural; progress in science and technology; and exogenous factors.

(a) Demographic

No African country in the seventies had its population growing at less than 2 per cent per annum. More than two-thirds had their population growing at 2.5 per cent or more per annum. In fact between 1970 and 1980 Africa's population grew at 2.9 per cent per annum while that of the world at 1.9 per cent and Africa's population is projected to grow at 3.2 per cent between 1981 and the year 2000 A.D.

At the same time, life expectancy has improved greatly for most African countries, and infant mortality has been reduced so much so that Africa today has the youngest population of any region in the world. It is therefore not surprising to see that one in every three persons in Africa is of primary or secondary school age as compared to one in five in Latin America or one in six in Europe. What is more is that between 1984 and 2000 AD Africa's school age population will grow at 3.3 per cent per annum, and by all accounts, this is a massive explosion which cannot be easily contained by current educational efforts.

In an attempt to match the rate of population growth with the demand for education, many African countries have been seriously handicapped by the lack of sufficient resources in terms of trained teachers; finance and educational (i.e. residential, recreational and instructional) facilities, training materials, textbooks and equipment. Certainly teacher-pupil ratios have remained very high in spite of the efforts made to train more teachers and improve their conditions of service.

Perhaps of greater significance is the fact that in 1983, there were 51.3 million primary and 11.1 million secondary places in 46 ECA African countries for which statistics were available. To maintain the 1983 participation rates in these countries by the year 2000 AD, these figures would have to become 90.7 million and 19.7 million respectively. (Table 4(a)). These figures become even more alarming when considered in terms of the projected gross enrolment at all levels of the education system in the whole of Africa. According to projections made in 1983, by the year 2008 AD total gross enrolment for universal primary school is estimated to reach around 176 million which secondary school would be around 70 million pupils, and higher education around 9 million students. (Table 4(b)). In terms of resources that would have to be provided for the building of new schools; training of teachers; purchase of equipment and instructional materials; and maintenance and running expenses of institutions, the task appears monumental for Africa countries. The consequence would be a serious fall in educational standards.

What is more is that there is the trend in Africa to devolve responsibility of paying for and managing education from the Central Government to the parents and the community. However as the number of school-age population is growing faster than the number of adults (working or not), the burden of supporting education through parents or the community in a world with a shrinking adult population is going to be very difficult. Indeed the extended family system as a source of financing education is likely to break down.

(b) Economic factors

Over the last two decades, Africa has come to understand how education and the economy interact and the development of one is conditioned by the other. Indeed the prospects for the development of education have been greatly affected by the recession in the world economy and therefore adjustments have to be made in educational planning so as to meet the new situation.

Since the beginning, the 1980's Africa has been ravaged by a serious economic crisis complicated by a wide spread drought which hit a large number of countries. Although Africa's immediate concerns are those of economic recovery and alleviating the current socio-economic crisis, it is a fact that amongst Africa's most urgent priorities are the acquisition of scientific and technological resources and the provision of education and training to ensure that the region can fight the forces of famine, hunger, disease, drought etc... It must be emphasized that such prospects are far from favourable for education: first in terms of the social and economic demand for education and training; second in terms of the resources which are assigned to education and training; and third in terms of the projected increase in the labour force and the attendant open unemployment and under-employment by the year 2008 A.D. (Table 4(b)).

This last situation should be considered in the light of the critical economic situation which existed since the early 1980s in Africa. Of the 50 African countries, 21 registered a negative growth rate in 1984; eleven had a GDP growth rate of less than 3 per cent and only five had a GDP growth rate of 8 per cent or more. These figures rebounded in 1985 and 1986 (see Table 5).

Table 4(a): Primary and Secondary Population and Enrolment in forty six African countries. Actual (1983) and Projected (2000)

	Primary education			Secondary education		
	1983	2000	% Change 1983-2000	1983	2000	% Change 1983-2000
School age population						
Actual	68.5	-	-	55.6	-	-
Projected	-	120.8	76%	-	98.6	77%
School enrolment						
Actual	51.3	-	-	11.1	-	-
Projected assuming:						
Gross enrolment ratio same as in 1983	-	90.7	77%	-	19.7	77%
Enrolment ratio 100%, no repetition and no dropout	-	120.9	136%	-	98.8	78.8%
Enrolment ratio 100%, repetition and dropout same as in 1983	-	131.8	157%	-	105.5	85.0%

Note: Population and enrolment figures in millions
Source: ECA Secretariat

Table 4(b): Projected Education and Employment in 2008 (in millions)

	2000	2008
Education enrolment	190.5	243.6
First level	136.9	175.9
Second level	49.0	70.0
Third level	5.6	8.7
Labour force a/	383.8	510.3
Rural	219.5	286.8
Urban	164.2	223.5
Wage employment b/	131.6	178.8
Open unemployment c/	32.7	44.7
Underemployment d/	166.3	238.8
Rural	140.0	203.0
Urban	26.3	35.8

Source: ECA projections, 1983

- a/ Excluding those in full-time education, medical and penal institutions as well as those in the armed forces (approximately 5 per cent of the age group 15-65).
- b/ Representing workers engaged in the formal wage sector of the economy for no less than 15 hours week for pay.
- c/ Representing all those looking for work in the formal, informal or subsistence sector of the economy without success.
- d/ All those in employment whose productivity because of health, personality or technical reasons, is lower than what is possible given the existing production conditions.

Table 5: Frequency Distribution of the Regions Countries
According to GDP Growth Rate *

Growth Rates	1984	1985	1986 (a)	1987(b)
Negative	21	11	10	5
0 - less than 3%	11	14	11	17
3 - less than 5%	10	14	24	24
5 - 8%	3	5	3	4
8% or more	5	6	2	-

Source/ ECA Secretariat

* GDP measured at 1980 prices

(a) Preliminary estimate (b) forecast

Table 6: Public Recurrent Expenditure per Student in Sub-Saharan Africa
1970-1983

	1970	1975	1980	1983
Expenditure per primary student as % of GNP per capita	\$67 16%	\$61 19%	\$51 16%	\$48 15%
Expenditure per secondary student as % of GNP per capita	\$362 111%	\$308 93%	\$125 62%	\$223 62%
Expenditure per tertiary student as multiple of GNP per capita	\$2,462 11	\$3,090 12	\$2,798 7	\$2,710 8

Note: Median values, per student expenditures in constant
1983 dollars.

Source: World Bank

As a consequence of the worsening economic conditions, expenditure per student at all levels had declined: primary education from US\$67 in 1970 to US\$48 in 1983; secondary from US\$362 in 1970 to US\$223 in 1983; and higher from US\$3,090 in 1975 to \$2,710 in 1983. (Table 6). This decline in costs per student has affected the quality of education as schools had less to spend on textbooks, equipment and instructional materials. From the above, it should be emphasized that education in Africa can no longer be planned on the assumption that there will be rapid economic growth and adequate supply of resources. Rather education has to make do with the available resources through a judicious and efficient use of what exists. While education cannot be held responsible for the increasing unemployment in Africa; it cannot remain insensitive to the problem. It must therefore open its doors to all sorts of productive work and stimulate the spirit of initiative and self-reliance.

In this regard, it is incumbent on all member States and particularly their institutions of higher learning to intensify their efforts in the implementation of the Mbabane Programme of Action which was adopted in 1985 in support of measures to mitigate the effects of the social and economic crisis in Africa^{1/}, and the implementation of the Harare statement on Higher Institutions ^{2/}. The statement not only calls for the harmonization of our approaches to the search for solutions to problems which alter African development including education; but to establishing mechanisms for working out strategies for formulating common research and teaching programmes; and drawing up common research programmes in support of Africa's priority programme designed to alleviate such pernicious problems as food, famine, disease, drought, desertification etc. There is therefore, urgent need to give greater attention to education, training, research and consultancy services in institutions of higher learning, if Africa is to face herself from dependence on developed countries.

(c) Political considerations

Over the last two decades, African education has been greatly affected by many political factors. The political factors themselves, however, have been subjected to the economic and social forces operating differently in different African countries. Indeed countries which have experienced many years of civil strife, wars, national liberation movements; coup d'état etc. have also experienced falling education standards.

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- 1/ Report of the Second Conference of Vice-Chancellors, Presidents and Rectors of Institutions of Higher Learning in Africa, Mbabane (Swaziland) 18-22 February 1985 E/ECA/CM.11/47, Addis Ababa, March 1985, Annex II.
 - 2/ The Harare Statement on the Role of Africa's Institutions of Higher Learning in Africa's Economic Recovery and Development: Third ECA/A All Conference of Vice-Chancellors, Presidents and Rectors of Institutions of Higher Learning in Africa, Harare, Zimbabwe, 19-21 January 1987.

Apart from this, many national governments have been concerned with expanding education to as many members of the population as possible not just as a matter of fulfilling their political promises, but also in response to some of the national needs.

Education over the last two decades has been affected by political decisions as regards the share of public expenditure on education, the control mechanism of education (public or private); the effectiveness of national parliaments; and the conflicts resulting from the demands for centralization or decentralization and participation. Education development has also been influenced by political commitments. There are countries like Ethiopia and Tanzania which have pledged to eradicate illiteracy before the end of the eighties. Zambia, Nigeria and many more have declared universal primary education, and others, free education. In all these cases, there has been a strong political commitment, which has acted as a catalyst for the fulfilment of individuals and national needs.

(d) Social and cultural factors

While these interact profoundly with education, they are subject to its influence. At the same time, education also serves to reproduce and perpetuate the social and cultural life of the people.

Over the last decade, the social conditions in Africa have been deteriorating fast. The largest number of least developed countries are in Africa where a number of people live in absolute poverty with average per capital income of less than US\$300 a year. Famine and malnutrition continue to plague many African countries and a good proportion of the African population live in mordant fear and despair from hunger, famine and disease. All these have had profound effect on educational quality, the development of knowledge and skills, and on the life of people in general; on educational structures and on the capacity and ability to develop the kind of schools which will minister to national needs.

Technically, the difference between modern schooling and traditional socialization has not been so much a matter of structures and methodologies as of purpose and perceptions of their function held by those who use them. Whereas traditional education is used as an instrument for promoting social stability and community well-being for communicating the values and skills possessed by the adult members of society, and for incorporating an individual into society where he could play a fitting role, education in the 80's is on the other hand, conceived as an instrument for promoting and controlling change, for transmitting new national values and curing economic ills, and for incorporating the young into a rapidly changing society. But in doing this, modern schools have been accused of being harmful to societies they serve because of their bookish curricula that are oriented towards higher levels of education which are beyond the reach of the majority of the pupils; divorced from the realities of African life and culture and unsuited for preparing the young for adult life, and have been very slow in reducing illiteracy.

Nevertheless, schools have become very much an integral and living part of the African societies which they serve. Their distinctive problems derive not from their imported character only, but from Africa's failure to make them more relevant to the socio-economic needs and to root them firmly in the culture of the society in which they exist and to produce an "African School" capable of

preparing the young for both a traditional and modernizing role without divorcing them from the society where they came. As was pointed out at the Third Conference of Vice-Chancellors in Harare, this calls for accelerating the process of reviewing the curricula research emphasis and priorities and learning methods in schools and higher institutions with a view to bringing them in line with the present needs for recovery and development.

(e) Scientific and technological factors

Many people, both in developed and developing countries look at technology as the new deity with promises of a better tomorrow. However the subject of technology in Africa bristles with all sorts of questions and issues. There are those who argue that Africa should have followed the Japanese example and borrowed from the shelves of technologies in the West. Others have contended that the region should have followed the Chinese model and utilized the scientific skills possessed by nationals and developed labour-intensive technologies in a continent with under-utilized labour.

Whatever the argument, the scale and speed of scientific and technological advance in Africa has been quite remarkable over the last decade. Effective use may not have been made of this scientific knowledge and technology; but this may be the result of Africa's inability to provide in-service and further training for new responsibilities or new careers for the educated people.

A major criticism of African education is that even after two decades of independence, it is still biased towards the arts and social sciences. And even where science and technology are being developed seriously, conventional criticism has it that technologies perfected and developed in the West or East are inappropriate to the factor endowments and production conditions of African countries. It is argued that technological borrowing will keep Africa further dependent on developed countries through lack of indigenous trained and skilled personnel and importation of foreign expertise. The Mbabane Programme of Action puts this very forcefully in perspective by calling upon all African institutions of higher learning to strengthen research efforts in the areas of science and technology, agriculture, industry and manpower development and the overall management of the economies while at same time preserving concerns for developing arts and humanities.

There is no doubt that during the last decade, the development of education has been greatly influenced by science and technology. The curricula, programmes and methods of teaching have benefitted from educational technology and its effects will continue to be felt during the next decade.

(f) Exogenous factors

An important influence on education is being exerted by funding and donor institutions, agencies or organization. A good example in this regard, are the options and structural measures being proposed by the World Bank for the development of African education during the next decade. Basically the policy options state:

- (i) that developing countries should recover the public cost of higher education because of its lower social returns compared to the first level; and then allocate the available funds to primary education;

- (ii) the explicit deemphasis of investment in higher education and greater emphasis on investment in primary education and that cost recovery system will lead to great social equity;
- (iii) that developing countries should develop a credit market for education together with selective scholarships especially in higher education;
- (iv) the compartmentalization of the education system into the three levels together with great emphasis on decentralized management of public education and encourage the expansion of private and community supported institutions;

These policy proposals coming from a very influential financing institutions spell far reaching consequences for the development of African education. Already reactions to these proposals have lead to unrest, concern and closures of some institutions in countries like, Ghana, Senegal, Sierra Leone, Zambia and Kenya, to name but a few.

On various fora, African ministers of education, planning and finance argued that if educational policies were to be formulated from the Bank's position of deemphasizing investment in higher education, it would lead not only to the collapse of the entire educational system, but also that of national economies. The ministers argued that the productive capacity of primary education is inconceivable without the contribution of higher education and the related extensive services. While there is merit in the observed higher social returns of primary education, no African country can expect to free itself from dependence on developed countries both from the point of finance and expertise, especially technological expertise without the enhanced development of higher education.

In another forum, several universities, Vice-chancellors and heads of African higher institutions severely criticized the proposals put forward by the World Bank. They contended that while developing countries agree with the universalization of education, this should not be done at the expense of higher education. They argued that the question of education should be assessed within a well-defined development context as set in the Lagos Plan of Action; in the Africa's Priority Programme for Economic Recovery (APPER) and in the United Nations Programme of Action for Africa's Economic Recovery and Development (UNPAERD).

It is important to view the educational process in developing countries within the context of the achieve need to long-term economic and social goals. Unless great emphasis is placed on tertiary education, there will be little or no positive technological and social changes. Certainly, developing countries, in their quest for specialized manpower resources, reduction of external expertise, and the reversal of rural-urban migration, cannot afford to ignore the strategic role played by higher education.

The proposed cost-recovery measures and the removal of education subsidies from the tertiary level would not necessarily lead to greater efficiency and social equity in education.

Because the economic crises and the fall in real incomes, the proposed privatization of educational systems in Africa could very well slow down education and cause further inequalities because most parents, let alone the extended family system in Africa, are not in a position to bear the full cost of education, especially at the second and third levels.

IV. Policies, Programmes and Practices for Maximizing Use of Educational Resources

Since 1981, ECA has undertaken studies on maximizing resources utilization in African institutions of higher learning. Broadly, these studies:

- (i) analysed and reviewed the constraints in the development and utilization of human resources;
- (ii) reviewed the existing resources utilization in higher education so as to explore the possibility of increasing intake within the existing facilities without injecting heavy financial inputs.
- (iii) assessed the possibilities for planned development; increased utilization through linkage of education with productive activities; and self supporting and income generating approach to education.

(i) Constraints in the development and utilization of Educational Resources

Education and training is an expensive undertaking which usually claims more than 4.5 per cent of National GDP of African states. In spite of education and training being expensive, the demand for increased accessibility to educational and training opportunities continues to increase every year. African governments are being made to do with the existing physical facilities, staff and financial resources to meet the increasing demand for higher education, specialized training and for more problem oriented research. The increase in demand for educational opportunities, has brought with it new problems such as that of outputs without the relevant knowledge and skills for national development.

Financial capital and recurrent expenditure inputs have become increasingly difficult and continue to be a major constraint. As a result, institutions of higher learning have been engaged in ways and means of utilizing their existing facilities, classrooms, lecture theatres, halls of residence, cafeterias, etc. and staff to meet the social demand for education. At the same time, institutions of higher learning are involved in finding ways and means of generating revenue for themselves. And most important has been the concern of such institutions to link their research and consultancy activities with the industrial world and centres of socio-economic activities. To do this requires a fresh thrust in the development of education and particularly at institutions of higher learning.

In this regard a few observations may be made relative to resource utilization particularly in higher institutions:

- (a) that educational personnel or resources available in our society are not being fully utilized because of relying too much on one single resource - the teacher/instructor/lecturer to facilitate the acquisition of knowledge, skills and values. There is a general failure of combining the services of a conventionally trained teacher with those of other resources and agents of change in the society.

- (b) the rising costs of building, equipment and instructional materials continue to impose serious burden on national governments thereby putting a question on conventional approaches to the provision of education. A question may be asked as to whether the conventional three terms or two semesters a year are wanted in Africa today. Can the long vacation period be made use of so as to shorten on the period one takes to complete a degree/course. Perhaps the summer school ought to be institutionalized in most African countries.
- (c) A third aspect is the issue of utilizing local resources - human and material. To what extent can African countries rely upon local resources in the development of education itself e.g. the production of textbooks cheaply and save countries on foreign exchange; on building materials and the production of spare parts badly needed in many African countries for national development;
- (d) Given that institutions at whatever level are established for the service of society, is it not possible for universities and other higher education institutions to organize their educational activities for both the youth and adults around or closely associated with the centre of socio-economic activities such as a factory, a farm, a shop, clinic or whatever industry is near so that colleges/institutions can become partially self-financing in linking their educational activities to such centres of socio-economic activities;
- (e) a final issue relates to the question of reduction of external resources being used in African institutions - human and material. Africa is still heavily supported by external resources - finance and staff. Even the very industry one would like to link African institutions which may be heavily run and financed on multinational/transnational basis. The research one wants to conduct in an institution in collaboration with industry or centres of socio-economic activities may be to the benefit of foreign countries and companies. How are we to ensure that expatriate staff are not conducting research in collaboration with industry as spying devices for the benefit of western countries.

In addition to the foregoing issues, the following ought to be considered and taken into account:

- (i) the need for urgent review of the curricula, course offerings and research emphasis to ensure that they are in tune with the urgency of the crisis and the demands of self-reliant and self-sustaining development in Africa and for training skilled manpower urgently needed for development and transformation;

- (ii) the urgency to increase the contribution of higher institutions to the effectiveness of the entire educational system including the strengthening of extension studies, distance teaching and continuing education programmes and taking measures to rationalize and maximize the use of educational resources (human, financial and material) at all levels of the system;
- (iii) the need to strengthen staff development programmes as a basis for improving the quality and effectiveness of teaching, learning, research and consultancy services so as to reduce dependence of developed countries.
- (iv) the urgency to explore the most efficient ways of sharing the limited resources available in Africa by making use of existing facilities particularly in areas of critical need on a regional and subregional basis; and
- (v) the need to support co-operation arrangements on a sub-regional and regional basis in curriculum development, textbook and instructional materials development; research and consultancy.

These questions of resources utilization and allocation to education and how best such resources should be utilized continue to bedevil African States. The continent's problem in educational development is the lack of knowledge of what kind of educational actions would be effective in educational development and what strategies should be adopted to make them more effective. In this regard, therefore, there is need for innovative approaches to the development of education. More so if students/outputs of the system are to come out with relevant knowledge, skills attitudes and values. Thus the strategies being proposed hereunder reflect the concern and the direction one would like to see African education take.

What is being implied here is that Africa is capable of providing an education which is not only cost-effective, but an education that would give its society increased inventiveness and innovation; an education that would bring about a union or marriage between work and study and would combine knowledge with practice and production. In this way, the outputs of educational systems would be available for production services without too much recourse to pre-service training. To do this would require that our institutions of higher learning do not continue to be modelled on the linear expansion of colonial times but that there is a will (both political and moral) a determination and commitment to delve into our past and use it as a spring board for innovative actions for future developments.

It is necessary to do this because many African countries have a number of qualified candidates for higher education who are often denied access to institutions of higher learning because of the lack of instructional/residential facilities, the limited resources available for educational development, and the inability of African states to relate education to the demands of industry and other socio-economic activities.

(ii) Strategies for innovative forms of educational development:

out of the findings of the studies conducted by ECA between 1981 and 1986, it is being suggested that in order for the African region to deal with the problems of the social and economic crisis; the demand for education by both primary and secondary learners wishing to have second chance education; to develop the necessary manpower for national development; and to ensure that existing resources (human, financial and material) are fully utilized, African countries will need to:

- (a) develop new areas of activities for institutions of higher learning;
- (b) seriously examine the rate of utilization of facilities in institutions of higher learning and propose measures for their optimal utilization. The studies undertaken, revealed that there is underutilization of facilities in institutions of higher learning;
- (c) appraise the role of higher institutions as lead agents of appropriate technology and of national development; and
- (d) linking education programmes to manpower and development needs.

(a) New Areas of Activities for Institutions of Higher learning

Most African universities are built around the traditional faculty/department of arts, social science, or humanities; natural or applied science. There are fewer departments, faculties or institutes of agricultural engineering, crop production, animal husbandry, forestry, agro-forest industries etc. in a continent which is basically agricultural and has vast forests. Indeed few African universities have well developed and staffed departments/faculties of forestry; agro-forest industries; mineral and natural resources, mining, food and agricultural technology; traditional medicine; rural development music and drama; arts; and crafts; ceramics and pottery; rural technology etc. They continue to function on Western models.

The traditional role of the university has not been seriously reviewed nor is it any longer applicable. Certainly, African universities should now be able to play the role of a reconnaissance institution for trade agreements, trade negotiations, technical aid and assistance, debt servicing, development of the economy and in international affairs. In fact, they should provide the lead in consultancy services, development and transfer of technology; in the solution of Africa's social and economic crisis; in the exploration and exploitation of natural and mineral resources; in rural development; in the development of educational technology and educational materials. Faculties in these areas should be seen mushrooming across the continent. There is enough evidence to show that there are a number of Africans adequately qualified in these fields but working in developed countries. The problem, therefore, is how to get them back to Africa and keep them in the continent.

(b) Resource utilization in Institutions of Higher Learning

The declining death rates combined with the high fertility rates have resulted into accelerated growth of school going population, an increase of which when seen against the unfavourable economic situation in Africa and the lack of commensurable increase in learning facilities has generated increased pressure on education facilities. Indeed the clearance for increased educational provision has soared phenomenally every year over the past two decades. This pressure has been felt appreciably at every entry point of the educational system, particularly at the post-primary point of entry; and most critically at the entry into institutions of higher learning.

Many more candidates qualify for higher level education than can be admitted and are therefore denied access to such institutions of higher learning due to:

- (1) lack of instructional and residential facilities;
- (2) limited financial allocations for higher education coupled with the government's inability to accommodate the increases in overall education budget, and
- (3) inability of African states to relate the increased intakes to manpower demand and requirements and to the development of socio-economic activities.

Despite these constraints, the studies undertaken during the last few years have revealed that in the course of the 365 days in the year, there are many hours/days or even months when both the residential and instructional facilities are not maximally utilized, if not idle. At the same time, there are many faculty members who are not engaged in significant research or teaching activities in spite of the claim often heard that staff members are over-loaded with teaching. Evidence from the studies clearly shows that in a number of higher institutions, academic staff have a minimum teachingload as specified by the university statutes, and only some faculties have heavier teaching loads.

Therefore, the denial of educational opportunities for so many hopefuls not only perpetuates the elitist type of education but is also a waste of considerable human resource potential needed for Africa development.

There is no doubt, however, that most institutions of higher learning are expensive investments not only in terms of per unit cost, but also in their outputs for being ill-equipped with the right knowledge and skills for gainful employment. This has often made employers ill at ease and has led to the rejection of graduates for lack of relevant knowledge, skills and right attitudes as well as lack of exposure to the pragmatic demands of production and the world of work. In other words, African universities do not adequately prepare their outputs for effective economic activities or self-employment.

On the basis of the foregoing and as a way of solving the increased demand for higher education, proposals have been made for:

- (1) increasing the intakes of universities through re-arranging the pattern of the academic year and having two intakes a year with each intake completing its academic work for the year in six months. This should be linked with the adoption of a work-study programmes so that those who have completed six months of studies should be sent to work in the sectors of the economy relevant to their field of study while others are in residence for academic studies; and
- (2) instituting research fellowships for academic staff on the basis of either four or five years of teaching followed by a year of research free from teaching.

However, it must be emphasized that if the outputs of present institutions continue to be economically unwanted the case for increasing intakes and thereby output, would be very weak. Certainly intakes should not be increased simply as a matter of easing the pressure of the popular demand for higher education. Such increases should be made in relation to:

- (1) the manpower supply and demand in selected priority sectors of the economy according to the Lagos Plan of Action; and
- (2) the field of study and faculties amenable for both the learning and work exposure.

What is being advocated here is that while seeking to increase intakes for maximizing the use of residential and instructional facilities, this should be related to manpower demand and supply situation of a given country. This should also be linked to the economic activities of a country thereby integrating theory with practice and learning with work experience.

In order to establish the integration of theory and practice with learning and exposure to the world of work, it would be useful to allow students to be in residence for six months and thereafter be attached and exposed to the world of work for six months which another group of students is in residence. This would also allow for interweaving instruction and work and linking them with distance teaching methods by radio or television. Central to this proposal is that within 52 weeks in a year it is possible to have two groups of students complete their academic studies each in 24 weeks having 4 weeks of vacation between them. Such an operation would undoubtedly require a small staff increase and some small financial increases. But this would be favourably counter-balanced by reduced unit costs and an output of students who are more readily employable and acceptable to the world of work.

Continuity of instruction and contact with institutions for students while on industrial/practical experience would be fostered through distance teaching methods or through the organization of seminars/workshops either once a month where students on practical attachment would be required to attend. It may also be necessary for students who are off campus to write one or two assignments during their work exposure period plus an end of assignment report. All of these should be assessed and their grades be part of the overall assessment of a student performance in the university.

(c) Universities as lead agents of rural and appropriate technology

Appropriate technology here refers to the technology which will raise the productivity and incomes of the people in rural areas, generate productive employment, make full use of local resources, and produce the type of goods and services needed to meet the minimum needs of the people. In this regard, universities should provide the lead in the development of national capability in the selection, generation and diffuse of appropriate and rural technologies with external inputs to these processes playing a supportive or catalytic role. Universities need to re-organize their resources, (human, financial and material) to cater for the development of such appropriate and rural technologies.

In this regard, they ought to be asking themselves such questions as:

- (1) does national capability and capacity for the generation and dissemination of rural and appropriate technologies, specialized training and education exist in African countries?
- (2) upon what factors does this capability depend?
- (3) what steps can universities take to generate and/or strengthen this capability?
- (4) Are universities in Africa doing anything to adapt large scale technologies to suit the requirements of developing countries; or are they doing anything to develop small scale employment generating technologies?

These questions strike at the heart of human resources development and utilization in the universities i.e. at the heart of current research pre-occupation. There is need for a shift in this direction and this calls for fundamental changes in university research practices and the policies relating to higher education.

(d) Linking Education to manpower and development needs

There is ample evidence in many African countries to show the imbalance between supply and demand caused by weaknesses in education and training and human resource development system. Education continues to follow the traditional pattern of preparing individuals for white-collar employment rather than have job-related training or giving more emphasis on productive education. Education and training institutions function in relative isolation from the actual problems and the needs of the public and private sectors. They are not effectively responding to national socio-economic problems.

What is a central issue to-day, is that there is an apparent surplus of generalists i.e. outputs from second level and third level institutions lacking in practical knowledge and skills and a serious shortage of technicians, industrial cadres, managers, doctors, engineers, technologists, agronomists, scientists and other specialized manpower. These disparities will persist unless there is serious action taken to link education and training to national manpower requirements. Therefore in linking education and training programmes to manpower and development needs, the following actions will be necessary:

- (1) manpower planning must go beyond pure quantitative forecasts for the planning of formal and non-formal education and should be related to a broad strategy of human resources development;
- (2) the importance of developing middle-level technical manpower should be re-emphasized because a good corps of middle level technical manpower is the backbone of a buoyant economy. In effect, technical support is needed for the efficient operation of the top level professional personnel;
- (3) the need to formalize links between the various levels of technical education and vocational training in the interest of facilitating the production of technical personnel and also encouraging universities and other higher institutions to create second chance opportunities for technical personnel who would like to improve on their professional qualifications; and
- (4) the need for curriculum planning and development at all levels of the educational and training systems to take into account the changing needs of industry, the economy and the world of work at large. In effect, therefore, the issue is one of reorienting curricula to national manpower requirements.

V. Current Educational policies, Programmes and Practices in Educational Resources Investment

Knowledge, skills, attitudes and values acquired through education and training are considered as the yeast in the loaf of political unity, the cure for social and economic ills; the elixir for determinating socio-economic conditions; the pill that would reduce Africa's dependence on developed countries; and the magic word which would turn developing Africa into a technological world. Yet there is ample evidence to show that current education systems and their curricula are failing to equip people with the right skills knowledge, values and attitudes needed in a world of change; that educational structures and formal education content ill-equip their products, thereby leaving behind a flotsam of disappointed and disillusioned young people seeking employment opportunities which do not exist; and that even if more schools were built, it is becoming increasingly difficult to do so, in the face of fast population growth and limited financial and material resources.

Perhaps it is better to remind ourselves that investment in education is not just for economic reasons. It goes beyond the social and economic reasons to the utilitarian aspects of education. It is for this reason that investing in educational resources development cannot be conceived as taking place at certain ages, stages, times and places when economic and social returns may be considered as most favourable, but that it must be seen as the unfinished business which is always there to be attended to. Decisions to invest in educational resources cannot be purely based on economic grounds. They can be social, political or otherwise. But whatever the reasons for investing in education, it usually turns out as a response to meeting some learning needs so that people can participate effectively in national development. These basic learning needs are:

- positive attitudes toward co-operation with one's family and fellow citizens; the community and national development, and the development of ethical values;
- functional literacy and numeracy so that an individual can engage in every day life and activities;
- a scientific outlook and an understanding of the process of nature in areas such as health, nutrition, food storage, sanitation, etc.
- functional knowledge and skills for engaging in national development, and in the production of goods and services for a meaningful life; for earning a living; and for engaging in a variety of local, technical and technological skills;
- Knowledge and skills for civic participation in local and national affairs, political and civic duties.

Current educational policies and practices have, in as far as possible, tried to comply with overall national objectives by deducing educational objectives from aims and objectives approved in overall national, political policy and those adopted in other sectors of national activity. As a consequence many member states have realized their educational strategies and modified their investment strategy from quantitative to qualitative; from dependence to self-reliance; from imitation and reproduction to search for innovation and from centralised and uniform procedures to diverse alternatives in education.

As a result, investment in education has been two-dimensional:

- the focus has been on internal reforms and the continued improvement of existing educational systems in respect of curricula, instructional methods, techniques and practices, instructional materials and equipment; training and retraining of teachers, reduction of wastage and dropouts; and mission procedures, examinations and accreditation;
- the search for innovative forms of education and alternative approaches to educational development such as intensified use of mass media and distance teaching techniques; emphasis on productive activities in education and on linking education with the world of work.

Central to the issue of investing in human beings is the fact that knowledge, skills and attitudes are important factor inputs in the national development process. The major problem however, is to identify the knowledge and skills needed for national development, and to formulate policies and programmes which will ensure the efficient development of such knowledge and skills. Often while the identification of knowledge and skills required may be done very well, the policies and programmes formulated for their development, tend to be counter-productive either because of national or international influences or factors. Financing and lending institutions have been able to influence and sometimes have imposed counter-productive policy measures regarding the development of education in Africa. At present whereas many African countries would like to put more financial resources in the development of higher education to ensure the production of relevant and critical skills needed for national development, influential financing institutions like the World Bank contend that such investment should be in the primary education sector which has the highest social returns and that there should be no education subsidies for those in institutions of higher learning.

Africa needs to spend more on higher education which holds the key to national development. What is needed is to have men and women with administrative and management skills; technical and technological skills, scientific knowledge for increased agricultural productivity, food storage and processing and for the exploration and exploitation of national resources. To develop these skills, knowledge and attitudes for a productive life calls for the non-compartmentalization of education into the three levels of the educational system. Rather education should be seen as a system whose various components ought to be developed together with due emphasis on those sectors of urgent need for national development.

Policies and programmes ought to be formulated and developed in such a way that effective use is made of existing resources. In this regard, therefore, member states should be assisted in sealing off the many sources through which they lose not only their financial resources, but the importation at high cost in foreign exchange of external expertise, consultants textbooks and equipment; and put a stop to the brain drain which continues to deprive Africa of the little human resources developed either locally or externally.

VI. Conclusion

This report has tried to show the development of education over the last two decades; the factors both internal and external which have affected and continue to influence the development of education; how resources especially in institutions of higher learning can be utilized effectively; and that investment in human resources calls not only for well articulated policies but for the effective planning of education.

We would, therefore, like to conclude that while there has been remarkable growth in enrolment, instructional facilities and in the provision of human, financial and material resources, there has not been an attendant increase in the quality of education, in skills mix and the products of the educational system.

Rather Africa after two solid decades of expansionary education is still very much short of all types of skills from administrative and management skills to scientific and technological skills. No wonder that in spite of the professed progress in education the Africa region is still a major importer of foreign expertise, consultants, scientists, doctors, technologists and worst still, lecturers and teachers.

This trend is likely to continue if international and external pressures being put forward as policy options for Africa are adopted by member States. For instance, the argument by some funding agencies to emphasize the development of primary education, because of its high social returns, at the expense of higher education runs contrary to Africa's declared priority as set in the Lagos Plan of Action, in APPER and in UNPAERD. Africa needs to invest more in higher education to ensure not only the development of adequate skills and knowledge but the qualitative improvement of the products of higher education. In other words, in their quest for specialized manpower resources, (such as engineers, technologists, agronomists, hydrologists, scientists, etc.) for the reduction of external expertise, the reversal or rural-urban migration etc., African countries should reinforce the role of higher institutions by allocating more financial resources into higher education for research, curriculum development, for instructional facilities, textbooks, equipment for library provisions and staff development.

Certainly the removal of educational subsidies, especially from higher education, will not improve the management of education. Rather it will slow down the development of education. Nor can the substitution of subsidies with loans and selective scholarships provide better and more efficient services to education. The administrative and management of loan schemes and a credit system market for higher education is likely to prove to be more expensive than the subsidies they intend to replace.

In view of the foregoing, we would like to emphasize that the development of education at all levels should be viewed as an organic whole rather than a process where separate entities develop exclusively of each other. Each of the levels need the other for its own sustenance. If African countries are to benefit from investing in education, they need to:

- (a) strengthen the development of sound educational policies for the enhancement of human resources development and utilization;
- (b) develop appropriate curricula with a heavier bias towards science, technical, technological, agricultural, crafts/artisanal and socio-cultural courses;
- (c) develop within the realities and conditions of each African country work-oriented and productive activities in education; industry-based and problem-oriented research and appropriate technology for national development.

- (d) develop national, sub-regional and regional capability for self-reliance and self-sufficiency in education and training, staff development, curricula reforms, consultancy services, research, finance, textbook production, equipment and instructional materials;
- (e) strengthen the capabilities particularly those of higher institutions to be more income-generating in their activities so as to be self-or semi-self financing through problem-oriented research, consultancy services and industrial attachment and the production of goods and services;
- (f) institute measures which would seal off the many sources through which financial resources are lost and which render the continent to a high rate of brain drain;
- (g) give greater attention to education, training, research, and consultancy services in debt and economic management so as to solve Africa's economic crisis; and
- (h) Harmonize approaches to the search for solutions to Africa's problems, and in defining priorities in education, training and research and the development of projects and programmes at both regional and subregional levels. A mechanism would therefore have to be worked out for evalving such common approaches and strategies for the collaboration, co-operation and co-ordination of sub-regional or regional research and training programmes. In fact there is urgent need for pooling together the little available resources to enhance Africa's capability in research, training and consultancy services.